

A NEW RACE OF CANCELLARIA FROM FLORIDA

BY H. A. PILSBRY

CANCELLARIA RETICULATA ADELAE, new subspecies. Plate 3, fig. 1.

The shell is similar to *C. reticulata* but differs by the smoother, often somewhat glossy, surface, the axial riblets being obsolete and the spirals very much reduced, nearly flat, on the last whorl, both being developed on the spire as in *C. reticulata*. The last whorl is more swollen below the suture. Apertural folds as in *C. reticulata*, but there is a very heavy, smooth, white, parietal callus projecting well forward at the posterior half of the inner margin, much heavier than usual in *C. reticulata*. The outer lip is somewhat straightened above and below the peripheral convexity, and there is the slight trace of a stromboid notch. Color buff with three wide interrupted, tawny to russet or in places chestnut, bands.

Length 52.3 mm., diameter 32 mm.; $9\frac{1}{2}$ whorls. Type.

Length 41 mm., diameter 24 mm.; 9 whorls.

Little Duck Key, Florida. Type 176085 A.N.S.P., paratypes in the Bales and Koto collections. Others to be placed in U.S.N.M. and M.C.Z. collections. All taken by Dr. B. R. Bales in the seasons of 1939-1940.

This Cancellaria is quite unlike the *C. reticulata* (Pl. 3, fig. 2—Hickory Pass, Florida) of both east and west coasts of Florida, also found at Key West. It is more like the large Caribbean forms, such as those of St. Thomas, Tortola and Antigua, but differs by the obsolescence of sculpture on the last whorl. Those large West Indian forms usually have interstitial spirals between the main spirals of the last whorl or two.

It is named for Miss Adele Koto, one of the keenest collectors of shells of the Keys.

SOME ANTILLEAN SAGDIDAE OR POLYGYRIDAE

BY H. BURRINGTON BAKER

Although primarily a study of Puerto Rican forms, these notes also add details on a Haitian and a Floridan species that have already been discussed briefly. Symbols used on the figures, but not mentioned in the text, are explained in Bull. Bishop Museum

158, page 92. Scales for figures of shells, genitalia and penes indicate 1 mm.; those for radular teeth 10 microns; and those for lines of right half of radular rows 100 microns (0.1 mm.).

Two new subfamilies are proposed in the following key:

POLYGYRIDAE (?).

- A. Talon well developed and carrefour mainly exposed; epiphallus poorly differentiated as simple enlargement of vas deferens or as a chamber inside penis; spermatophore (so far as observed) a simple membranous sac: Thysanophorinae.

SAGDIDAE (!).

- AA. Talon obsolescent and carrefour mostly imbedded in albumen gland; epiphallus well developed, usually with flagellum; spermatophore (so far as seen) with horny walls and often complex. (C) Penial appendix single or absent, without greatly swollen base; lung and kidney medium to long. (B) Spermathecal sac below aorta; flagella cylindric, short or absent; penial appendix (when present) opening through large papilla into small penis; Puerto Rico to Cuba:

Aquebaninae, new subfamily

- B(AA). Spermathecal sac above aorta, with slender duct opening into swollen stalk near terminal attachment of retractor; penial appendix (absent in *Hojeda*) opening through a ring into appendicular branch; principal flagellum large, more or less crescentic and flattened, at least at tip, and with lumen near one side; large species mainly Jamaican: Sagdinae.
- C(AA). Penis has three appendices, with big, very thick-walled bases; lung and kidney short; shell *Succinea*-like; flagellum extremely long; Puerto Rico (and Lesser Antilles):

Platysuccineinae, new subfamily

- MCLEANIA DARLINGTONI Bequaert and Clench. Pl. 4, figs. 1-4.
1939, Mem. Soc. Cuba. Hist. Nat. 13: 283, pl. 36, f. 4-6.

Shell largely epidermal, thin; keel serrations not hollow. Embryonic whorls around 1.5; first not serrate, rapidly assuming fine, discontinuous, anastomosing, more or less retractive wrinkles, which separate fusiform pits, and fairly coarse, irregular, protractive threadlets. Later whorls with fine, closely spaced, epidermal growth-riblets, which are stronger on serrations, along irregular and anastomosing retractive bands above, and in patches below. Peristome with palatal, basal and columellar sides well

reflected; basal wall thickened internally; parietal region not reflected but curved upward near middle to form a marked, semi-circular sinus, and downward more laterally as an indentation, or a weak, tooth-like projection into the aperture.

Animal similar to *Thysanophora paleosa*, 1927, Proc. ANSP. 79: 238, but brownish, with darker bands along edge of sole, broad black ones each side of head and a narrow middorsal one; tentacles light with dark tips. Inconspicuous right and left (anterior) mantle-lappets present. Lung black, with colorless lines, or large areas, over principal veins; almost 5 times length of base or twice kidney, which is very attenuate anteriorly, over 3 times length of its base and almost twice pericardial length. Ototestis consisting of fan-shaped or conical lobes (7 seen laterad) in basal 0.6 of apical liver lobe. Talon (GT, f. 3), which internally is divided into 3 caeca at apex, and most of carrefour (X) exposed although bulb of latter is behind prostate (DG), which is attached to uterus (UT). Albumen gland (GG) extending to above apex of stomach. Spermatheca (S) sometimes containing membranous sac, probably a spermatophore. Vagina (V) almost absent. Penis (P) externally simple, with nerve from cerebral ganglion, but, when opened lateroventrally (f. 4), epiphallic chamber (opened) occupies almost $\frac{2}{3}$ of length; opening of vas (DE) simple; aperture into penis proper (EP) large. When opened dorsally (f. 2), penis proper (opened) overlaps epiphallic opening (EP) almost $\frac{1}{3}$ its length. Pharyngeal retractor almost free; right and left free retractors soon separating; right ommatophoral muscle in penioviducal angle. Salivary glands apparently fused above oesophagus, forming sagittate mass about 1.5 length buccal mass. Jaw solid, with extremely low, rounded thickenings, that barely undulate margins. Radular formula (f. 1): $30 + 1 + 12 + 18$; entocone appearing on 11th to 13th tooth; outer 10 may break up ectocone; 144 rows counted.

The dissected specimens come from cloud-zone forest, under decaying wood, in Maricao Forest, on main ridge south of Maricao; also found under dead palm leaves, on ridge west of Adjuntas. Although the radular as well as the shell characters of this species warrant its retention as a genus, *Melecania* seems fairly close to typical *Thysanophora*, or, at least, to the only section (*Miroconus*) of which the anatomy is known. In its reflected peristome with a tooth-like indentation, as well as its simple genitalia, *Melecania* also definitely approaches the Polygyridae; in fact, as suggested in the key to subfamilies, the gap between that family and all the Thysanophorinae seems, on the whole, less than



Figs. 1-4, *Melanina darlingtoni*. Figs. 5-9, *Yunquica densistrata*. Figs. 10-12, *Aquebana pubescens*.

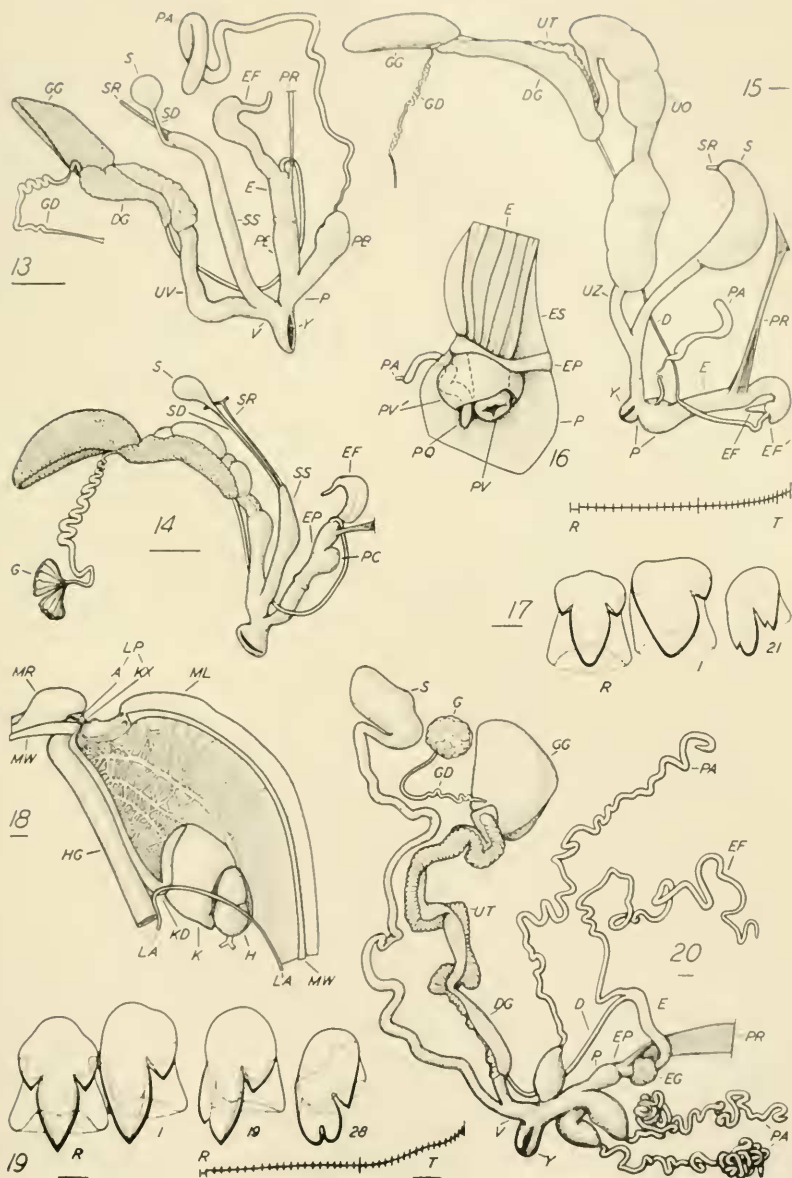


Fig. 13, *Hyalosagda subaquila*. Fig. 14, *Hojeda inaguensis*. Figs. 15-17, *Aquibana volutina*. Figs. 18-20, *Platysuccinea portoricensis*.

that between the last and the true Sagdidae. The anatomically known genera of Thysanophorinae, to which *Itzamna* might be tentatively added on the basis of its distribution, are outlined in the following key:

- A. Spermathecal sac above aorta; radular marginals with entocoines; epiphallus with vestigial flagellum; Mexico and south: *Microconus (wilhelmi)*.
- AA. Spermathecal sac below aorta; flagellum absent. (C) Central and inner laterals of radula with distinct ectocoines, but marginals without entocoines; albumen gland medium in length; shell without reflected peristome or large carinal serrations. (B) Epiphallus broad, attached on side of penis; shell smoothish; western U. S.: *Microphysula (ingersolli)*.
- B(AA). Epiphallus terminal (*Setidiscus*), vestigial (*Lyroconus*) or inside penis (s.s., like *Melcania*); shell with epidemal outgrowths; mainly tropical: *Thysanophora (impura)*.
- C(AA). Central and inner laterals with or without weak ectoconal notches, but marginals with entocoines; albumen gland longer than other female organs; shell with reflected peristome, large carinal serrations and epidermal riblets; western Puerto Rico: *Melcania (darlingtoni)*.

YUNQUEA DENSELIRATA, new genus and species. Pl. 4, figs. 5-9.

Shell (f. 7-9) depressed turbinate, with evenly rounded and gradually increasing whorls; almost white, dullish but iridescent, and translucent. Embryonic whorls 1.7, soon assuming sharp widely spaced growth-threads, in interspaces between which weaker ones develop and become stronger until subequal. Later whorls above and below with sharply cut but very fine and closely spaced, weakly areuate growth-threads, of which about 1 in 7 is very slightly stronger; below also with irregular spiral striae, especially in umbilicus. Suture well impressed but with narrow bevel. Aperture crescentic; peristome sharp, about 10° to shell-axis, noticeably arcuate above; parietal callus fairly strong. Umbilicus (measured from overhanging peristome) 8.6 times in maj. diam. Dimensions of type (ANSP. 176681); alt. 2.45 mm., maj. diam. 147 (3.60 mm.) [at 4 wh. 2.91, 4.5 wh. 3.43, 5 wh. 3.8 mm.?], min. diam. 137 (3.36); alt. apert. 67 (1.64), diam. apert. 112 (1.84).

Foot light in color, with head, tail and especially long tentacles darker; tail with rounded tip and obscure dorsal groove. Right and left (anterior) mantle-lappets minute; umbilical lobe fairly prominent. Lung blackish, about 4 times base and almost thrice length of kidney, which is triangular, about twice its base and 2.5

pericardium. Pigment blackest over ovotestis, which consists of fan-shaped lobes (7 seen laterally) and is imbedded in basal 0.6 of apical liver lobe. Carrefour (X, f. 5) imbedded in albumen gland, in which intestine is also impressed. Epiphallus (E) with thin-walled flagellum (EF) and terminal enlargement (EF'); remainder thick-walled, convoluted inside sheath (ES; opened), which is attached throughout by fibers, receives penial retractor (PR) and contains glandular ring (EG) near base (EP); short, domed vergie papilla (outlined) present. Penis (P) enervated from cerebral ganglion. Atrial (Y) opening a vertical slit just behind inferior tentacle. Salivary glands or ducts 1.3 times length of buccal mass. Jaw consisting of 33 narrow fused plaits, which serrate margins; growth-striae very distinct. Radular formula (f. 6): $19 + 1 + 8 + 11$; practically all teeth tricuspid, although occasional outer ones divide ectocone; 74 rows counted. Pharyngeal and right and left free retractors almost immediately separating; right ommatophoral muscle in penioviducal angle.

In two weeks, 3 specimens of *Yunquea densclirata* were collected on fallen leaves, along Rio Minas trail from Restaurant El Yunque, below Big Trees trail; altitude about 2500 feet (station ER3). *Yunquea* seems to be a primitive member of the Aquebaninae; it is distinguished from the other genera in the following key:

A. Radular laterals tricuspid; ureteric opening in posterior corner of lung; shell with fine close growth-threadlets; penial appendix absent, but sheathed epiphallus with glandular ring near base; eastern Puerto Rico:

Yunquea (densclirata).

AA. Radular laterals lack entocoenes; ureter complete; shell with epidermal outgrowths. (C) genus *Aquebana*; penial appendix emptying through large papilla into small penis; central and inner laterals have distinct ectocoenes; flagella very short or absent. (B) epiphallus lacks flagellum or vergie papilla, but has glandular sheath around base; oviparous; shell hirsute; Haiti: subgenus *Exsuavitas (pubescens)*.

B(ΔΔ). Epiphallus has short flagella and vergie papilla, enclosed with appendicular papilla in a membranous hood; probably viviparous; shell scabrous; eastern Puerto Rico:

subgenus *Aquebana (velutina)*.

C(ΔΔ). Penial appendix absent; central and inner laterals with or without weak ectoconal notches; flagellum possibly longer; Cuba: *Suavitas (suavitas)*.